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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-2839A
Plant ID No.:	109-00019
Applicant:	Dominion Transmission, Inc. (DTI)
Facility Name:	Loup Creek Station
Location:	Kopperston, Wyoming County
SIC Code:	4922
NAICS Code:	486210
Application Type:	Modification
Received Date:	November 8, 2010
Engineer Assigned:	Jerry Williams II, P.E.
Fee Amount:	$2,000.00
Date Received:	November 8, 2010
Complete Date:	January 5, 2011
Due Date:	April 5, 2011
Applicant Ad Date:	November 10, 2010
Newspaper:	*Pineville Independent Herald*
UTM's:	Easting: 449.31 km Northing: 4176.86 km Zone: 17
Description:	Replacement of an emergency generator.

DESCRIPTION OF PROCESS

The following process description was taken from Permit Application R13-2839A:

Loup Creek Station is a compressor facility that services a natural gas pipeline system. The purpose of the facility is to recompress natural gas flowing through a pipeline for transportation. The compressor engines (EN01-EN04) at the facility receive natural gas from a valve on a pipeline and compresses it to enable further transportation in the pipeline. This project includes the replacement of the existing auxiliary generator (AUX) with a new Caterpillar G3406 367 hp emergency generator (EG-01). The proposed emergency generator will be used to supply the facility with critical electrical power when purchase power is interrupted.

SITE INSPECTION

A compliance inspection was conducted on March 4, 2010 by Todd Shrewsbury. The facility was operating in compliance at that time.

Directions as given in the permit application are as follows:

From I-77 at Harper Road, turn onto Route 3 North for 10.4 miles. Turn onto Route 99 West for 14.3 miles. Turn left onto Route 85 and travel 4 miles to Kopperston Grade School. Turn left onto private road and proceed to station.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Maximum controlled point source emissions associated with Permit Application R13-2839A from DTI's Loup Creek Station are summarized in the table below.

Emission Point ID	Emission Unit ID	Process Unit	Pollutant	Maximum Controlled Emission Rate	
				Hourly (lb/hr)	Annual (ton/year)
EG-01	002-02	367 hp Caterpillar G3406 Emergency Generator	Nitrogen Oxides	1.42	0.35
			Carbon Monoxide	0.09	0.02
			Volatile Organic Compounds	0.32	0.08
			Particulate Matter-10	0.03	0.01
			Sulfur Dioxide	0.01	0.01
			Formaldehyde	0.06	0.02

The following table indicates the control efficiencies that are achieved from controlling the emergency generator (EG-01) with a 3-way NSCR catalyst (1C):

Control Device ID	**Control Device**	**Emission Unit**	**Pollutant**	**Control Efficiency**
1C	3-way NSCR catalyst	367 hp Caterpillar G3406 Emergency Generator	Nitrogen Oxides	90 %
			Carbon Monoxide	90 %
			Volatile Organic Compounds	90 %

The following table represents the emissions change associated with the generator replacement:

Pollutant	Old Auxiliary Generator Emissions (tons/year)	New Emergency Generator Emissions (tons/year)	Change in Emissions (tons/year)
Nitrogen Oxides	1.98	0.35	-1.63
Carbon Monoxide	1.98	0.02	-1.96
Volatile Organic Compounds	0.05	0.08	0.03
Particulate Matter-10	0.01	0.01	0
Sulfur Dioxide	0.00	0.00	0
Formaldehyde	0.01	0.02	0.01

REGULATORY APPLICABILITY

Unless otherwise stated WVDEP DAQ did not determine whether the permittee is subject to an area source air toxics standard requiring Generally Achievable Control Technology (GACT) promulgated after January 1, 2007 pursuant to 40 CFR 63, including the area source air toxics provisions of 40 CFR 63, Subpart HH and 40 CFR 63, Subpart ZZZZ.

The following rules applies to this permitting action:

45CSR2 (Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers)

DTI would be subject to the opacity requirements in 45CSR2, which is 10% opacity based on a six minute block average.

45CSR4 (To Prevent and Control the Discharge of Air Pollutants into the Open Air which Causes or Contributes to an Objectionable Odor or Odors)

45CSR4 states that an objectionable odor is an odor that is deemed objectionable when in the opinion of a duly authorized representative of the Air Pollution Control Commission (Division of Air Quality), based upon their investigations and complaints, such odor is objectionable. No odors have been deemed objectionable.

45CSR13 (Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, and Procedures for Evaluation)

45CSR13 applies to this source due to the fact that the existing equipment is permitted under a 45CSR13 permit. DTI's proposed emergency generator (EG-01) is subject to a substantive requirement of an emission control rule (40CFR60 Subpart JJJJ) promulgated by the Secretary. Therefore, DTI is subject to 45CSR13.

45CSR16 (Standards of Performance for New Stationary Sources Pursuant to 40 CFR Part 60)

45CSR16 applies to this source by reference of 40CFR60, Subpart JJJJ. DTI is subject to the recordkeeping, monitoring, and testing required by 40CFR60, Subpart JJJJ.

45CSR30 (Requirements for Operating Permits)

DTI is an existing major source subject to 45CSR30. Changes authorized by this permit must also be incorporated into the facility's Title V operating permit. Commencement of the operations authorized by this permit shall be determined by the appropriate timing limitations associated with Title V permit revisions per 45CSR30.

40CFR60 Subpart JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines)

DTI's proposed emergency generator is subject to 40CFR60 Subpart JJJJ, which sets forth emission limits, fuel requirements, installation requirements, and monitoring requirements based on the year of installation of the subject internal combustion engine.

The 357 hp Caterpillar G3406 emergency generator (EG-01) will be subject to this rule. The emission limits for this engine is the following: NOx – 2.0 g/hp-hr (1.62 lb/hr); CO – 4.0 g/hp-hr (3.24 lb/hr); and VOC – 1.0 g/hp-hr (0.81 lb/hr). Based on the manufacturer's specifications for these engines and the use of a 3-way catalyst, the emission standards will be met.

Because the emergency generator will not be certified by the manufacturer, DTI will be required to perform an initial performance test within 180 days from startup, and subsequent testing every 8,760 hours or 3 years, whichever comes first.

The following regulations do not apply to the facility:

45CSR14 (Permits for Construction and Modification of Major Sources of Air Pollution for the Prevention of Significant Deterioration)

The construction of the Loup Creek Station does not constitute a major modification under 45CSR14. The increased potential emissions associated with the Loup Creek Station are less than the significant amounts set forth in 45CSR14. The proposed changes result in an increase in Carbon Monoxide (0.02 TPY), Nitrogen Oxides (0.35 TPY), Particulate Matter-10 (0.01 TPY), Volatile Organic Compounds emissions of 0.08 tpy. Therefore, a major modification has not occurred as a result of this permitting action. However with the removal of the existing auxiliary generator and annual limits of 500 hours per year for the proposed emergency generator, the net potential change in emissions is the following:

Pollutant	Net Project Potential (tpy)
Nitrogen Oxides	-1.63
Carbon Monoxide	-1.96
Volatile Organic Compounds	0.03

The following rules may apply to the facility:

40CFR63 Subpart ZZZZ (National Emission Standards for Reciprocating Ignition Internal Combustion Engines)

40CFR63 Subpart HH (National Emission Standards for Hazardous Air Pollutants: Oil and Natural Gas Production and National Emission Standards for Hazardous Air Pollutants: Natural Gas Transmission and Storage)

40CFR63 Subpart HHH (National Emission Standards for Hazardous Air Pollutants: Natural Gas Transmission and Storage)

WVDEP DAQ did not determine whether the permittee is subject to an area source air toxics standard requiring Generally Achievable Control Technology (GACT) promulgated after January 1, 2007 pursuant to 40 CFR 63, including the area source air toxics provisions of 40 CFR 63, Subpart HH and 40 CFR 63, Subpart ZZZZ.

These promulgated national emission standards for hazardous air pollutants (NESHAP) limit emissions of hazardous air pollutants (HAP) from oil and natural gas production and natural gas transmission and storage facilities. These final rules implement section 112 of the Clean Air Act (Act) and are based on the Administrator's determination that oil and natural gas production and natural gas transmission and storage facilities emit HAP identified on the EPA's list of 188 HAPs.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

There will be small amounts of various non-criteria regulated pollutants emitted from the combustion of natural gas. However, due to the concentrations emitted, detailed toxicological information is not included in this evaluation.

AIR QUALITY IMPACT ANALYSIS

The changes to this facility do not constitute a major modification under 45CSR14. Based on the nature of the emissions and the annual emission rate, no air quality impact analysis was performed.

MONITORING OF OPERATIONS

DTI will be required to perform the following monitoring:

1. Monitor and record quantity of natural gas consumed for all combustion sources.

DTI will be required to perform the following recordkeeping:

1. Maintain records of the amount of natural gas consumed in each combustion source.
2. Maintain records of testing conducted in accordance with the permit. Said records shall be maintained on-site or in a readily accessible off-site location
3. Maintain the corresponding records specified by the on-going monitoring requirements of and testing requirements of the permit.
4. Maintain records of the visible emission opacity tests conducted per the permit.
5. Maintain a record of all potential to emit (PTE) HAP calculations for the entire facility. These records shall include the natural gas compressor engines and ancillary equipment.
6. Perform are applicable required monitoring, recordkeeping, reporting and testing that is required under 40CFR60 Subpart JJJJ.
7. The records shall be maintained on site or in a readily available off-site location maintained by DTI for a period of five (5) years.

RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates DTI's Loup Creek Station meets all the requirements of applicable regulations. Therefore, impact on the surrounding area should be minimized and it is recommended that the Wyoming County location should be granted a 45CSR13 modification permit for their facility.

Jerry Williams II, P.E.
Engineer

Date